

# Profiles of Selected Target Audiences: Promoting the Dietary Guidelines for Americans

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To decrease the risk of nutrition-related diseases, Americans need to narrow the gap between scientifically based nutrition guidance and their nutrition-related behaviors. This study examines the usefulness of segmentation and audience-profiling techniques in promoting the Dietary Guidelines, designed to help narrow this gap. Using the 1991-94 survey of the Market Research Corporation of America Information Services (MRCA), we segmented 491 women gatekeepers into tertiles (Better Eaters, Fair Eaters, and Poor Eaters) based on their scores on a modified version of the Healthy Eating Index. We then compared the segments' demographic characteristics; health and diet orientation; values about, and perceived benefits and barriers to, healthful eating; nutrition, food preparation, and shopping habits; and media habits. Results showed that women gatekeepers were interested in improving their diets, and they differed significantly regarding values, benefits, and barriers of eating a healthful diet and nutrition; food preparation practices; and shopping habits. We discussed the implications of these differences in terms of improving the quality of the diet.

**T**he *Dietary Guidelines for Americans* (23), issued by the U.S. Departments of Agriculture (USDA) and Health and Human Services (DHHS), answer this basic question: "What should people eat to stay healthy?" Forming the basis of Federal nutrition policy affecting food, nutrition education, and information programs, the Guidelines stress the significance of dietary balance, variety, and moderation (7). Still, in the United States, four of the leading causes of death—heart disease, cancer, stroke, and diabetes—are linked to nutrition (10). Americans still need to increase total intake of fruits, vegetables, and grain products and to decrease intake of fat and saturated fat. Although some progress has been made based on

progress in meeting Year 2000 Objectives, the startling increase in the portion of Americans who are overweight or obese poses one of the biggest challenges in meeting Healthy People 2000 (24). A summary measure of dietary status—the Healthy Eating Index—has shown that 7 of 10 Americans need to improve their diet (4). Other results have also indicated that although Americans choose a wide variety of foods, they consume less than the recommended servings from the fruit, dairy, meat, grains, and vegetable groups of the Food Guide Pyramid. Americans' consumption of calories from fats and sugars, however, exceeds Pyramid recommendations (11).

Thus evidence has shown that Americans still need to improve their diet; Americans need to narrow the gap between scientifically based nutrition guidance and consumer behavior that may increase the risk of illness from nutrition-related diseases. To better meet the needs of the public, some authors believe the Guidelines need to do two things: (1) continue to advance national dietary guidance that is based upon scientific evidence and (2) promote dietary guidance in ways that will lead to behavior change, improved health, and nutritional well-being (22).

The purpose of this study is to examine the extent to which major differences exist between audience segments on key variables, to profile these audience segments, and to suggest whether these differences warrant distinct nutrition education approaches in attempting to change dietary behaviors. We describe three segments of female gatekeepers and how their characteristics differ on several dimensions: demographic and health status; values about, and benefits and barriers to, healthful eating; nutrition, food preparation, and shopping habits; and media habits. We discuss the implications of these differences in terms of improving the dietary behavior of these segments. We believe that nutrition educators can directly apply this information when they design program interventions. The underlying assumption of social marketing and marketing approaches is that different audience segments require alternate approaches for achieving a desired behavior change. This study examines whether this assumption applies to nutrition education to create dietary behavior change.

Lastly, we examined results in relationship to behavioral models and theories. We examined how the segments might differ with respect to their stage of behavior change and the extent to which audience segments could be described, based on Prochaska and Di Clemente's transtheoretical model of change (18). The stages of this model are precontemplation (not considering whether to make a change), contemplation (thinking about making a change), decision (making definite plans to change), action (initiating change), and maintenance. This model has been used to describe dietary behavior in relationship to weight control and the reduction of dietary fat (6,19).

We looked to social learning theory, which is based on social cognitive theory, to inform recommendations for designing strategies for behavior change (3,17). Social learning theory emphasizes the interaction of cognition, other personal factors (e.g., self-efficacy), and environmental factors on behavior. Several critical personal factors suggested by social learning theory have been assessed in this analysis:

- Perception of the situation
- Anticipated outcomes of behavior
- Knowledge and skills to perform a behavior
- Confidence in performing a behavior

We considered the theory of planned behavior in forming program implications (1). This theory suggests that people will be more likely to take action if it leads to consequences they desire. It also suggests that behavior and behavioral intent are influenced by the degree of control people think they have over circumstances and their ability to perform a behavior.

## Background

Research indicates that nutrition promotion of the Guidelines should focus on behavior change; have a strong consumer orientation; segment and target consumers; use multiple, reinforcing, interactive channels; and refine consumer messages continually (22,23). Segmentation, a frequently used approach in commercial-sector marketing, has been used in programs designed to change health behaviors (2) and has been used to create a profile or snapshot that represents the target audience. It, as well, has encouraged creative communication that is tailored to the target audience (6,12,15).

To segment audiences, social marketers analyze potential markets and create subgroups of target populations with similar characteristics regarding the desired behavior. Then they allocate resources among one or more subgroups and vary the methods used to reach each subset (2). Health communicators also use segmentation methods to identify people who are similar in key respects and to tailor the content and delivery of the communication based on people's profiles (16,21). Target-audience profiles have been used in large-scale nutrition education programs, including the 5 A Day media campaign of the National Cancer Institute (13,15) and the Nutrition and Physical Activity program of the Centers for Disease Control (9).

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## Methods

### Database

We analyzed data from the 1991-94 survey of the Market Research Corporation of America Information Services (MRCA). Nationally representative, the MRCA survey consists of information on people's food and beverage consumption and their opinions and attitudes about general interests, health, diet and food preparation, shopping, and media usage. The MRCA data set consists of five surveys and two database systems: Household Information Form, Menu Census Diaries, Psychographic Questionnaire, Diet Information Quiz, and Food and Nutrition Attitude Inventory.

To select participating households, MRCA uses a multistage, stratified-random procedure. In stage 1—the Household Recruiting Pool—a sampling pool of households is generated from generic consumer listings of U.S. households of various demographic types. Households that agree to participate then qualify for the second stage of sampling—the National Consumer Panel. The Panel consists of 5,000 households whose demographic characteristics (household size, home-maker age, household income, census regions, and metro-area size) are matched to the U.S. Census. The third stage—the Menu Census Panel—consists of a subsample of households (n=2,000) from the National Consumer Panel. For the Menu Census Panel, MRCA uses a stratified-random procedure to select 500 households each quarter. Detailed food diaries of food and beverage consumption are collected for 14 consecutive days. Actual serving sizes are not collected. They are imputed based on eating occasions for individual foods by applying standard serving sizes. For this reason, they should be considered

estimates rather than precise measures of food and beverage consumption. The Nutrient Intake database measures macro- and micro-nutrient intake; the Food Guide Pyramid database measures “servings”<sup>1</sup> of the Pyramid Food Groups.

### Healthful Eating Measure

The USDA Healthy Eating Index (HEI) measures the overall quality of Americans' diet (4) and uses data from the USDA Continuing Survey of Food Intakes by Individuals (CSFII). The HEI uses 10 components to measure different aspects of a healthful diet:

- Components 1-5 measure the degree to which a person's diet conforms to serving recommendations of the food groups of the USDA Food Guide Pyramid: Grains (bread, cereal, rice, and pasta), vegetables, fruits, milk (milk, yogurt, and cheese), and meat (meat, poultry, fish, dry beans, eggs, and nuts).
- Components 6 and 7 measure consumption of total fat and saturated fat, respectively, as a percentage of total food energy intake.
- Component 8 measures total cholesterol intake.
- Component 9 measures sodium intake.
- Component 10 measures the variety of a person's diet on any given day.

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<sup>1</sup>MRCA used total frequency of “eatings” as the main measure of the individual food consumed. MRCA estimated serving sizes for each eating occasion for over 330 collapsed food categories based on 1987-88 USDA data on number of grams for each eating occasion for individual food items. MRCA then assigned different serving sizes to 18 age-gender groups: four age groups for children under 12 and seven age groups each for males and females over age 13.

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**Americans still need to improve their diet; Americans need to narrow the gap between scientifically based nutrition guidance and consumer behavior that may increase the risk of illness from nutrition-related diseases.**

Each component of the HEI has a maximum score of 10 and a minimum score of zero; intermediate scores are computed proportionately. The maximum overall score for the 10 components combined is 100. Higher component scores indicate intakes close to recommended ranges or amounts.

The MRCA does not provide information on variety; hence, we used a modified version of the HEI to examine characteristics that distinguish women from the MRCA sample with higher quality diets from those with lower quality diets. All scores on the modified version were adjusted to a 100-point score. Thus the total maximum score was 100. To compute individual HEI scores, we matched the female gatekeeper to the appropriate serving recommendations of the Pyramid Food Groups. We calculated gatekeepers' average percentage of calories from total fat and saturated fat and compared their intakes of cholesterol and sodium with Pyramid recommendations.

## Sample

We selected healthy adult women in the United States as the unit of analysis (target audience) because they often are gatekeepers who shape their family's nutrition and health habits.

Our sample consisted of women gatekeepers aged 25 through 55, reporting household income of \$20,000 to \$125,000 and no major health problems. Those excluded reported having high blood pressure, diabetes, heart disease, high levels of serum cholesterol, or followed a diet for diabetes or allergies. We could not use marital status as a screening variable because MRCA does not include information on respondents' marital status. The database also does not include information on vegetarian diets, employment status or profession,

and the relationship of household members. The final sample of 491 gatekeepers was weighted to reflect the U.S. population of interest.

After ranking and dividing the gatekeepers into tertiles (segments) based on their scores on the modified HEI, we developed profiles of the women gatekeepers and used multiple *t* tests to examine differences among the three segments. SUDAAN (Software for the Statistical Analysis of Correlational Data), which accounts for sampling designs that are complex and stratified, was used in the analysis to ensure appropriate estimates of standard errors for hypotheses testing.<sup>2</sup>

## Results

### Demographic Characteristics

The women gatekeepers who were *Better Eaters* (having the highest HEI score) are the basis of comparison with other groups of women gatekeepers: *Fair Eaters* and *Poor Eaters*. The women gatekeepers differed in some ways (table 1). Compared with the other groups, the Better Eaters more closely met the recommendations of the USDA Food Guide Pyramid. Based on percentages, overall, the women gatekeepers' average Healthy Eating Index score was 57 percent. With an average score of 74 percent, the Better Eater had the higher HEI score, followed by the Fair Eater, with 62 percent; and Poor Eater, with 52 percent. Healthy Eating Index scores were calculated based on the degree to which a person in the sample's diet

conformed to serving recommendations of the food groups of the USDA Food Guide Pyramid as previously described.

There are small differences in the gatekeepers' average years of education, height, Body Mass Index (BMI), likelihood of having children present in the household, and race. The Better Eater was more likely than the other Eaters to have more years of education. Compared with the Poor Eater, the Better Eater had a lower BMI score, was slightly taller, and more likely to be White or of a race other than Black. Compared with the Fair Eater, the Better Eater was less likely to have children.

The women gatekeepers had some characteristics in common (tables 1 and 2). Their characteristics were considered similar if more than 60 percent of the women in each group exhibited them and if the differences in the characteristics were statistically insignificant ( $p > .01$ ). These three groups were similar demographically based on age, household size, household income, and self-reported weight.

### Values, Benefits, and Barriers to Healthful Eating

Similar to the Better Eater, the Fair Eater (F) reported that eating a healthful diet was important to her (table 3). Both said they could avoid future health problems—a perceived long-term benefit—by eating more healthfully. Similarly, the Fair Eater and the Better Eater reported that eating “healthy foods” gave them the energy they needed—a perceived short-term benefit—and agreed that eating “healthy foods” improved their physical appearance.

<sup>2</sup>“SUDAAN is specifically designed for analysis of cluster-correlated data from studies involving recurrent events, longitudinal data, repeated measures, multivariate outcomes, multistage sample designs, stratified designs, unequally weighted data, and without replacement samples” (20).

**Table 1. Education distinguishes all three segments of women gatekeepers: Demographic and health status variables, MRCA 1991-94**

Variable	Diet status		
	Better Eaters	Fair Eaters	Poor Eaters
	<i>Mean</i>		
Age (years)	39	38	38
Household size	3.3	3.3	3.3
Household income (thousands)	42.97	41.40	41.93
Education (years)	14.2*	13.7*	13.2*
Weight (kg)	67.39	67.96	71.65
Height (cm)	164.7*	163.9	162.7*
BMI	25.07*	25.54	27.31*
	<i>Percent</i>		
HEI score <sup>1</sup>	74	62	52
Children present	56*	72*	65
White	94.9*	87.5	83.6*
Black	4.1	7.3	9.3
Other	1.0*	5.2	7.1*

<sup>1</sup>The Healthy Eating Index scores differ because this factor was used to segment the women gatekeepers.

\*Means or percentages within the same row are significantly different ( $p < 0.05$ ).

**The Poor Eater was less likely than the Better Eater to believe it was important to eat a healthful diet, look and feel physically fit, maintain a proper weight, and to identify with potential benefits of healthful eating.**

The Fair Eater differed, however, from the Better Eater in two important ways. (1) She was less likely than the Better Eater to believe she could avoid future health problems by exercising. (2) Both convenience and taste were barriers for the Fair Eater, who was more likely than the Better Eater to say that “healthy foods” had to be convenient for her to use them and to report that a reason for not choosing healthful foods was because they didn’t taste good.

The Poor Eater (P) was less likely than the Better Eater to believe it was important to eat a healthful diet, look and feel physically fit, maintain a proper weight, and to identify with potential benefits of healthful eating. She was less likely to agree that she could avoid future health problems by eating a healthful diet and by exercising; she was less likely to report the perceived short-term benefit that eating “healthy foods” gave her the energy she needed and improved her physical appearance. The Poor Eater also

indicated that she was less likely than her counterpart to say she knew how to eat healthfully. She was, however, more likely than the Better Eater to report that eating healthfully was too complicated and confusing.

### Health and Diet Orientation

All of the women gatekeepers believed they were knowledgeable about health and nutrition (table 2). They reported an interest in improving their diets, agreed they had some weight to lose, and tried to do so, at least occasionally. Similarly, they agreed that it was important for them to live long and healthy lives.

### Nutrition, Food Preparation, and Shopping Habits

Similar practices among the women gatekeepers extended to how they shopped for food and planned and prepared it (table 2). Among the many similarities, all three groups redeemed the coupons they clipped from magazines and newspapers.

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**Table 2. Better Eaters, Fair Eaters, and Poor Eaters have many characteristics<sup>1</sup> in common, MRCA 1991-94**

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Variable	Commonalities
Health and diet orientation	Believe they are knowledgeable about health and nutrition Interested in improving their diets Think they have some weight to lose Try, at least occasionally, to lose weight Believe it is important for them to live a long, healthy life
Physical activity	Frequency
Psychographics	Like to meet new people Join actively in community groups Desire to be well respected Like the outdoors Enjoy taking the family to a different vacation spot each year
Shopping	Make a complete list before going shopping Enjoy browsing through supermarket aisles Do not like the excitement of a busy supermarket Save a lot of money by shopping around for food bargains Stock up on named brand foods that they like during sales Cut coupons out of newspapers and magazines Redeem coupons (almost always) Send away for items offered through advertising Willing to pay for certain food items for special occasions
Food planning and preparation	Enjoy cooking and think of themselves as creative cooks Don't like to bother cooking just for themselves (when alone) Enjoy preparing a fancy meal for their families once in awhile Collect recipes from the food sections of the newspapers Exchange recipes with friends and relatives Add something extra (almost always) to prepared foods Serve the same evening meals from one week to the next Try to make use of leftovers but usually throw them out
Family eating habits	Have some family members who are concerned about being overweight
Media	View television-network evening news, cable news/television Read magazines and newspaper

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<sup>1</sup>Characteristics were common if more than 60 percent of each group exhibited them and if the differences in the characteristics were statistically insignificant ( $p > .01$ ).

**Table 3. Most measured beliefs and practices of Poor and Fair Eaters differ from those of Better Eaters, MRCA 1991-94**

Variable	Degree to which Poor (P) and Fair (F) Eaters say the following, compared with Better Eaters		
	As likely	More likely	Less likely
<b>Values, Benefits, and Barriers</b>			
Eating a healthy diet is important to me.	F		P
I can avoid future health problems by eating healthfully.	F		P
I choose healthy foods because they give me the energy I need.	F		P
I choose healthy foods because they improve my physical appearance.	F		
Healthy foods have to be convenient for me to use them.		F	
A reason for not choosing healthy foods is they don't taste good.		F	
Trying to eat healthy is too complicated and confusing.		F, P	
I can avoid future health problems by exercising.			F, P
It is important for me to look and feel physically fit.			P
It is important for me to maintain my proper weight.			P
I know how to eat healthy.			P
<b>Nutrition, Food Preparation, and Shopping Habits</b>			
I worry about the nutritional content of the foods I eat.	F		P
I always see to it that my family takes vitamins.	P		F
I'm much more willing to try a new recipe when someone I know tried it and liked it.		F	
I always or usually pay attention to on-shelf, aisle display.		F	
Most snack foods I like are unhealthy.		P	
I do not discuss various foods and their food values with my family so they understand nutrition better.		P	
I always pay attention to instant coupons.		P, F	
I make every possible effort to see that my family eats really nourishing foods.			F, P
I get upset if the family doesn't eat together.			F, P
I go out of my way to buy non-fat foods.			F, P
Frozen foods are more nutritious than canned foods.			F, P
I serve fish because it has less fat.			F, P
I disagree that red meat is better for your health than fish.			F, P
I do not look for prepared dishes when I shop.			F
I collect recipes from magazines.			P
I disagree that my family is easy to please.			P
<b>Media</b>			
I watch television in general, including entertainment programs, and daytime television.		F, P	
I watch television programs like police/private eye and daytime serials because I really like them.		F	
I watch television serials/soap operas because I like them.		P, F	
I watch prime-time television programs.			P
I read women's general interest magazines.			P

Note: The "F" and "P" for the Fair Eaters and Poor Eaters, respectively, indicate that these women gatekeepers differ significantly from the comparison group: the Better Eaters, at the 0.01 level.

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## Compared with the Better Eater, the Poor Eater was less likely to worry about the nutritional content of the foods she ate.

The groups differed, however, in a number of important ways related to nutrition, food preparation, and shopping habits (table 3). Similar to the Better Eater, the Fair Eater worried about the nutritional content of the foods she ate. Still, she was less likely than the Better Eater to make an effort to serve her family nourishing foods, get upset if the family didn't eat together, and go out of her way to buy nonfat foods. She was more likely than the Better Eater to pay attention to on-shelf, aisle display ads and instant coupons and to look for prepared foods when shopping.

Compared with the Better Eater, the Poor Eater was less likely to worry about the nutritional content of the foods she ate. Like the Fair Eater, she was also less likely than the Better Eater to make every possible effort to see that her family ate nourishing foods, to get upset if the family didn't eat together, and to go out of her way to buy nonfat foods. The Poor Eater was more likely than the Better Eater to pay attention to instant coupons, to agree that most of the snack foods she liked were unhealthful, and to disagree that she discussed foods with her family so they understood nutrition better.

### Media

The three groups watched similar television programs or stations—evening network news, cable news, and cable TV—and they read similar magazines and newspapers (table 2). However, the Fair Eater and Poor Eater were more likely than the Better Eater to watch television in general, including entertainment (non-news) shows and daytime programs (table 3). The Poor Eater also watched less prime-time television than did the Better Eater and was less likely to read women's general interest magazines.

## Discussion

### Profiles

Demographic differences in audience segments do not explain the overall differences in the three segments' approaches to food consumption. Results of this analysis indicate a small number of demographic differences. Then what might explain these differences?

The Better Eaters are more likely than the Poor Eaters to report that eating a healthful diet is important to them and are concerned about the nutritional content of their diets. They are likely to perceive short- and long-term benefits of eating healthfully, and are taking action to eat healthfully.

Better Eaters are categorized in this analysis as being either in the action or maintenance stages of the trans-theoretical model of change, though direct assessment of the stages of change was not measured in this analysis. Better Eaters are considered in one of these two stages of change based on their HEI score, their concerns about nutrition, and their greater tendency to act on their concerns. It is therefore not possible to determine precisely whether they are in the action or maintenance stage, using the algorithm applied by Curry et al. for staging dietary fat reduction (6).

In terms of social learning theory, Better Eaters appear to be able to anticipate the outcomes of their behavior and self-determine their behavior, successfully although not perfectly. They appear to be confident of their ability to carry out healthful eating behaviors based on their being less likely to report that trying to eat more healthfully is complicated and confusing than did women in the other two segments. Better Eaters experience



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a rather high degree of control over their circumstances in terms of eating healthfully, based on their responses to all questions, collectively. This characteristic is a key factor in the theory of planned behavior. Still, Better Eaters have room for improving their diets based on their HEI scores.

Fair Eaters, compared with Better Eaters, report a mixture of benefits, barriers, and actions that may account for their lower HEI score. Like the Better Eaters, Fair Eaters are more likely than the Poor Eaters to report that eating a healthful diet is important to them, and are concerned about the nutritional content of their diets. They are as likely as Better Eaters to perceive short- and long-term benefits of eating healthfully, and are taking some action to eat healthfully. However, they are less likely to go out of their way to eat healthfully, such as making an effort to serve their families nourishing foods and buying nonfat foods. They are more likely to respond to in-store promotions such as on-shelf, aisle display ads, and instant coupons. Taste and convenience are especially important to Fair Eaters, and they are more likely than Better Eaters to select prepared foods. In terms of media use, they are more likely to watch television, particularly for entertainment. Lastly, the Fair Eaters are more likely to report that eating healthfully is complicated and confusing, compared with Better Eaters.

In sum: Fair-Eaters are convinced yet not committed to eating healthfully. While they are interested in the positive results associated with eating healthfully and are convinced of its benefits, Fair Eaters are less proactive in making healthful eating choices, and appear to respond passively to stimuli in their environment, be it family, in-store cues, desire for sensory satisfaction, or ease in meal preparation. As a group, they

appear to eat healthfully when it's convenient and could be characterized as "convinced, but not committed" to eating healthfully. Many factors can intervene in their environment to prevent them from eating healthfully.

Fair Eaters could be considered to be in a late stage of contemplation in terms of stages of change, although screening questions for staging were not included in the original MRCA questionnaire. No questions were asked that could help determine whether Fair Eaters had developed a plan of action that would place them in the preparation stage of the transtheoretical model of change. Still, their passivity in relationship to environmental cues indicates that they have not developed a concerted plan of action that they intend to implement in the near future.

In terms of social learning theory, Fair Eaters are aware of the outcomes of behaviors, including expected results and benefits but lack the knowledge and confidence to eat more healthfully based on the fact that, compared with Better Eaters, they are more likely to report that trying to eat healthfully is too complicated and confusing. They also seem to experience a rather low degree of control over their circumstances, an important factor influencing their behavior that is emphasized by the theory of planned behavior.

A number of factors may prevent Poor Eaters from taking actions that could improve their dietary habits, factors that may account for their HEI scores being the lowest among these three groups. They are less likely to report an interest in achieving results related to healthful eating. For example, they are less likely to report that eating more healthfully is important to them, compared with Better Eaters. Poor Eaters are also less likely to be convinced of long-term benefits: they are

less likely than Better Eaters to agree that they can avoid future health problems by eating a healthful diet. Nor are they convinced of short-term benefits such as being less likely to agree that "healthy foods" give them the energy they need. They are also less likely to know how to eat healthfully and are more likely to perceive that eating healthfully is complicated and confusing.

Poor Eaters are less concerned about nutrition for themselves and their families: they are less likely to report that they worry about the nutrient content of the food they eat. They are also less likely to talk with their families about foods in terms of their nutritional value or to report making every possible effort to see that their families eat nourishing food.

Thus Poor Eaters are somewhat interested in improving their diets, but are not convinced of the benefits of doing so. They are also less concerned with achieving the potential results of eating healthfully than are Better Eaters. While they, like other gatekeepers, claim to be knowledgeable about health and nutrition, they admit to not knowing how to eat healthfully. They could be characterized as "interested but unconvinced" that healthful eating is particularly relevant to them.

Poor Eaters could be categorized as being in an early phase of contemplation (transtheoretical model of change) based on their interest in improving their diet. Although Poor Eaters appear to be aware of where they stand when it comes to eating healthfully, they lack three key critical personal factors described by social learning theory: (1) the ability to anticipate outcomes of their behavior, (2) knowledge and skills to act, and (3) confidence to perform this behavior.

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## Program Implications

Given the large number of characteristics these three segments of women have in common, should the same approach to nutrition education be used for these three groups? Speaking in favor of a common approach are the characteristics the three segments share. However, many of the characteristics the three audience segments have in common may be attributed to the fact that the segments are all primary food preparers. A number of important differences among these three segments of women discussed in this paper suggest that different approaches to nutrition education are needed for each segment.

For the Better Eaters especially, providing tips that are simple, positive, and easy to apply may build on their current interest and actions to improve their diets. A different approach should be used with Fair Eaters. Nutrition education for this group should appeal to their interest in taste and convenience. Communication and education strategies should be used to deliver actionable messages and illustrate easy methods for improving their diet that do not sacrifice taste. Suggestions should be offered that are easy to apply such as adding a grated carrot to prepared tomato sauce as a way to add sweetness, improve its taste, and add important nutrients. It may also be helpful to highlight convenient ways to more healthful eating such as offering ideas that they can do quickly such as a “10-minute-a-day” way to improving their eating habits. Fair Eaters should be targeted with a few carefully selected nutrition messages that are easy to understand and apply, and that are likely to cut through confusion generated by media coverage of nutrition news. Nutrition education for Fair Eaters should use mass media to remind them frequently about eating healthfully. It should also be presented in an entertaining way,

because this audience is used to regular television entertainment.

It will require a highly targeted approach to reach Poor Eaters with nutrition education. An approach is needed that immediately captures their attention and establishes cultural and lifestyle relevance. To help establish relevance of consequences of healthful eating, messages to this audience should come from people they perceive as peers or from someone they admire, such as a celebrity, who can model the desired behavior. For example, the Milk Mustache Campaign has shown celebrities and opinion leaders with their milk mustaches as a way to establish that drinking milk is a highly acceptable and desirable behavior with their target market.

Nutrition education programs and materials that are highly targeted to a specific lifestyle or cultural experience are likely to be welcomed. For example, the National Cancer Institute developed and tested *Down Home Healthy*, a recipe booklet designed for an African-American audience, and found that respondents were highly interested in this book because of its cultural relevance (8). Introducing this recipe booklet was used to explore interest in an approach of encouraging African Americans to use modified versions of traditional recipes to lower fat and increase fiber intake. Responses to the recipe booklet and accompanying brochure were the most active and engaging aspects of focus group sessions. Participants welcomed this approach, if the taste of the food presented in the recipes met their expectations.

Successful nutrition education strategies are recommended that will break abstract nutrition concepts into practical action steps that can easily be mastered and applied to help build knowledge, skills, and self-efficacy for

eating more healthfully. For example, guidance about adding more fiber to the diet should include a brief discussion of the Nutrition Facts panel of the food label. It should include making a specific request to ask people to go to the grocery store and compare the fiber content on the food label of several breakfast cereals they like, and then purchase a cereal that contains 20 percent or more of the Daily Value for fiber per serving. This approach was highly effective in transforming apathy into keen interest in nutrition among working and middle-class women attending focus groups sponsored by the National Cancer Institute (14).

This segment of women gatekeepers, in particular, may be encouraged to begin taking action as they experience more short-term benefits that are meaningful and motivating. To accomplish this, nutrition education and promotion efforts for Poor Eaters should move them from being interested to being convinced that healthful eating is meaningful and relevant to them.

## Summary

The most effective ways to reach these women gatekeepers by segment is as follows:

1. **Better Eaters:** Offer new tips that can be added to their current actions for eating healthfully.
2. **Fair Eaters:** Insert frequent environmental cues to eating healthfully that will appeal to their interest in taste and convenience.
3. **Poor Eaters:** Establish relevance by identifying ways to appeal immediately to this audience that are consistent with their lifestyle and cultural context.

These findings are consistent with those of authors reviewing nutrition education for adults (5). In their review of successful nutrition education interventions for adults, the authors suggested nutrition education communication and strategies in programs that

- Are ongoing and multifaceted;
- Use mass media to increase awareness and enhance motivation;
- Tailor strategies based on formative audience research;
- Use motivational messages and educational strategies; and
- Employ a behaviorally focused approach that is based on personal factors, behavioral capabilities, and environmental factors.

The results of this study suggest that nutrition educators can apply the same segmentation methods used by social marketers and health communicators. It can be expected that doing so would allow them to make the most effective use of resources and to increase program efficiency. We suggest that with a greater understanding of applicable target segments, nutrition educators, policymakers, and other information multipliers will be better-positioned to improve the diets of Americans.

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